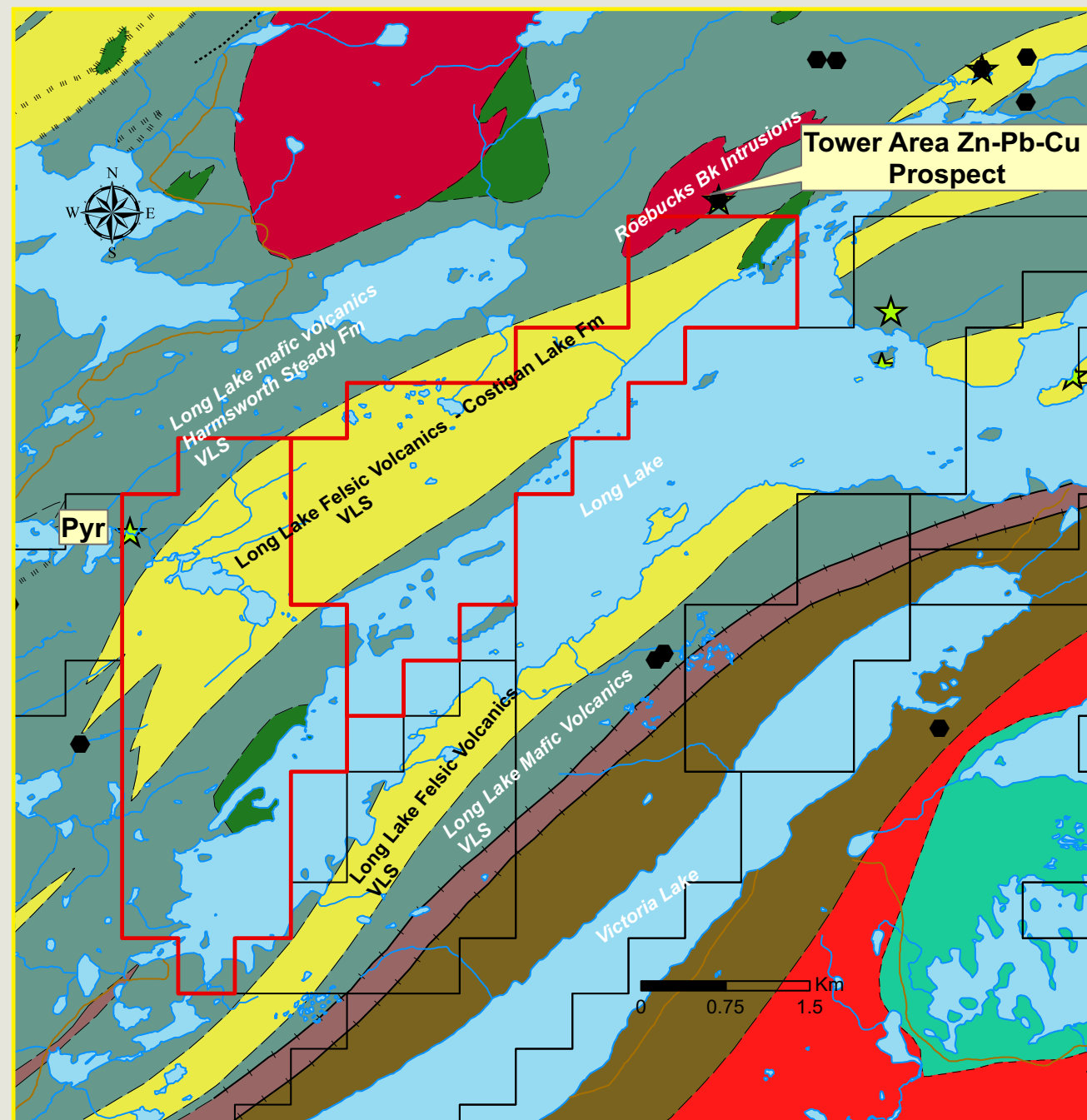


# NEWFOUNDLAND & LABRADOR

## Prospect • Discover • Develop



# Long Lake - VMS



Map 2: Claims Location and Regional Geology

Crisby-Whittle, L. V. J. (compiler) 2012: Bedrock geology dataset for the Island of Newfoundland. Newfoundland and Labrador Department of Natural Resources, Geological Survey, Open File NFLD/2616 version 7.0. Mineral Occurrence Source: Mineral Occurrence Database - Geological Survey, Department of Natural Resources Website: <http://www.gov.nl.ca/mines&en/geosurvey>

Approximately 250 m SW of sample RNF 24525, a large angular float containing semi-massive to massive bands of pyrite-sphalerite-galena in rhyolitic tuff(?) was sampled (RNF24530) and returned **0.88% Zn, 0.58% Pb, 46.8 ppm Ag and 37 ppb Au**. Samples RNF 24525 and RNF24530 are interpreted to be relatively local in origin due to their angular nature. Interestingly, these two float samples occur down-slope from historic Pb and Zn soil geochem anomalies and documented altered and mineralized felsic volcanic/volcaniclastic rocks. For example, drill hole LLW97-7 intersected **0.8 m of 0.24% Pb and 0.41% Zn and a 2.49% Zn** grab sample are located just to immediate north of the property along the projected favourable Long Lake Volcanic stratigraphy. The small float sample containing 3.6% Cu appears to be somewhat anomalous in terms of metal content (i.e., high Cu and low Zn-Pb) and suggests the potential for copper-gold rich targets or even zoned massive sulphides in the area. The provenance of the small copper-rich boulder, however, is less certain due to its less-angular nature. Nevertheless, further work should be conducted in the Tower Grid area during future programs. The abundance of silica-sericite-pyrite altered rocks along parts of the shoreline of Long Lake also lends support to the potential for further base metal prospects or deposits in the belt. Follow-up work is warranted on the Long Lake Property. A short winter program of basal till sampling should be conducted up-slope and up-ice from the angular float samples described in the report. It is suggested here that these surveys cover historic soil geochemical anomalies and the projection of the altered Long Lake

### Highlights:

- Several occurrences of semi-massive sulphide boulders
- Float returned up to 3.62% Cu, 363 ppb Au
- Other float returned 0.88% Zn and 0.58% Pb
- On strike from Long Lake Deposit
- Host rocks contain Duck Pond Mine

volcanics at the Tower Grid.

Historic Showings in the area.

The Long Lake Belt hosts three massive sulphide occurrences discovered and drill tested by Noranda Inc. The most significant is the Long Lake "Deposit" (10 km on strike from the present property) The currently defined resource for the Long Lake main deposit is 407,000 tonnes of indicated reserves with grades of 7.82% Zn, 1.58% Pb, 0.97% Cu, 49 g/tAg, and 0.57 g/tAu; and an additional 78,000 tonnes of similar grade inferred resources (Keller and Bernier, 2012).

### Mineralization Model

The Victoria Lake Supergroup hosts numerous massive sulphide deposits and gold showings. The property is situated within highly prospective mafic to felsic volcanic rocks of the Victoria Lake Group, which hosts several significant volcanogenic massive sulphide (VMS) deposits including the Duck Pond and Boundary deposits. The property lies 6 kilometres southeast of the high-grade Boomerang Prospect which was discovered by Messina Minerals in December 2004.

The Long Lake VMS Property is located approx 110 km SW of Badger and 65 km SW of Buchans (NTS mapsheet 12A/06). Access to the property is via the Buchans Highway (Route 372) to Buchans Junction. A logging road leads SW along Red Indian Lake as far as the East Tulks River area. Further access is via Tulks Valley forestry road.

### Regional Geology

The property lies within the Exploits Subzone (Dunnage Zone) and is underlain by the pre-Caradocian Victoria Lake Supergroup (VLS - Map 2) representing one of several pre-Caradocian island arc complexes in central Newfoundland. The Long Lake group forms part of the Victoria Lake supergroup of central Newfoundland and hosts one defined VMS deposit and several other occurrences. The group is dominated by felsic volcanic rocks, and lesser amounts of mafic volcanic rocks and intercalated volcano-sedimentary rocks. The rocks formed in volcano-sedimentary basins within active volcanic arcs on the peri-Gondwanan margin of the Iapetus Ocean.

### Local Geology

The felsic volcanic rocks of the Long Lake group were originally associated with the rocks of the Tulks Volcanic group to the west; but more recent work assigned all of the felsic volcanic rocks in the group to a single formation; the ca.506 Ma Costigan Lake Formation.

### Mineralization and Previous Work

A comprehensive account of previous exploration in the region is available in Sparkes (2005: Assessment Report for Rubicon Minerals).

The property was optioned from Kevin Keats in the early 2000s by Rubicon Minerals. Work completed by Rubicon on the Long Lake property consisted of compilation, prospecting and limited geological mapping in 2005. Significant discoveries include a small float of massive pyrite-chalcopyrite, which returned values of **3.62% Cu, 363 ppb Au, 6.5 ppm Ag and 490 ppm As** (RNF24517). A second significant float discovery (RNF24525) located approximately 1.3 km to the SW of RNF24517 consisted of massive bands of pyritic sulphide and silica alteration assaying **916 ppb Au, 650 ppm As and 310 ppm Pb**: Zn and Cu values were low. This sample also contained a fragment/inclusion of quartz-porphyrity within the altered and mineralized rock.

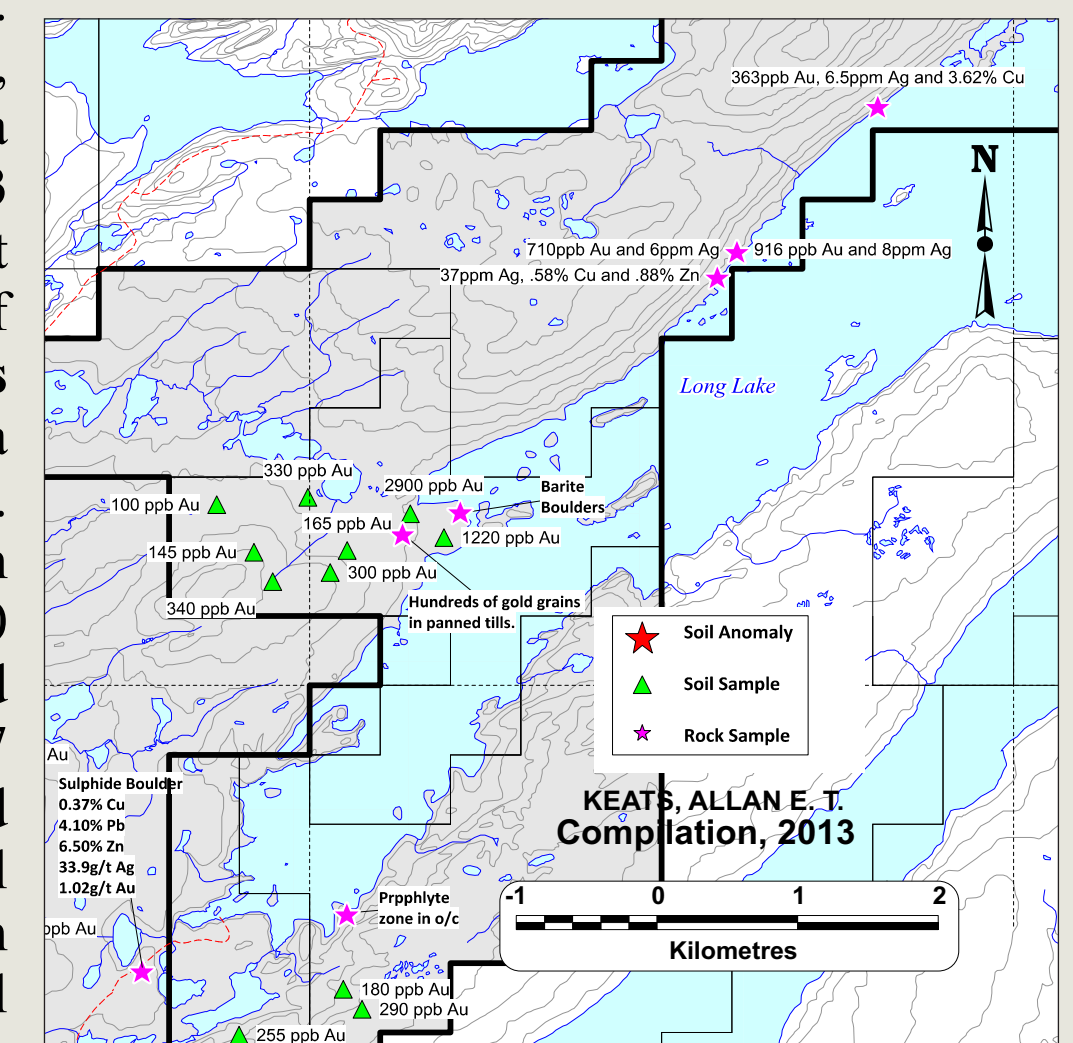


Figure 1: Compilation Map

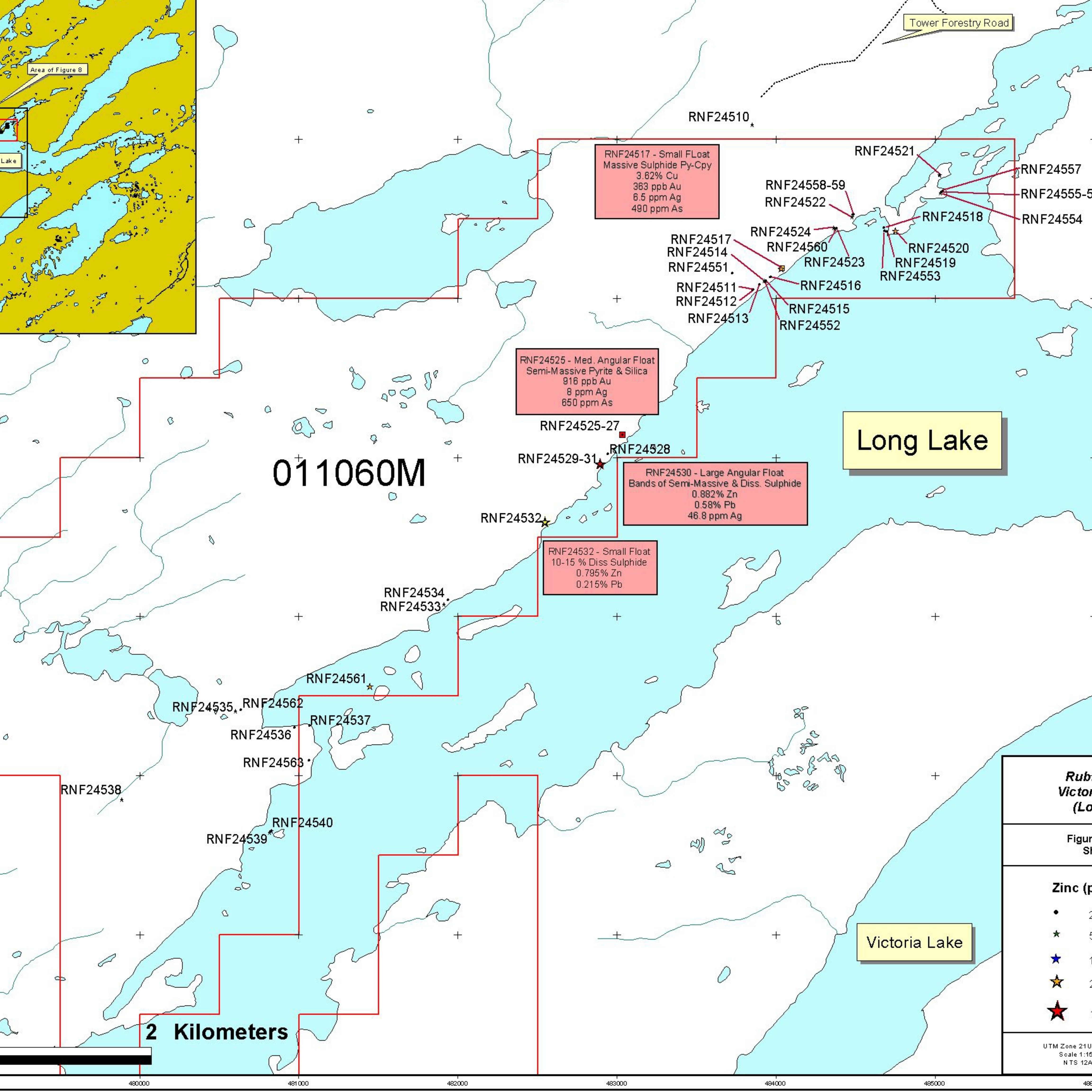
## FOR MORE INFORMATION CONTACT:

Kevin Keats

Ph: (709) 424-1077

E-mail: [kkeats@nf.sympatico.ca](mailto:kkeats@nf.sympatico.ca)

March, 2019



Tower Forestry Road

Area of Figure 8

Lake

RNF24510

RNF24517 - Small FLoat  
Massive Sulphide Py-Cpy  
3.62% Cu  
363 ppb Au  
6.5 ppm Ag  
490 ppm As

RNF24521

RNF24558-59  
RNF24522

RNF24557

RNF24555-5

RNF24554

RNF24518

RNF24520  
RNF24519  
RNF24553

RNF24517  
RNF24514  
RNF24551

RNF24524  
RNF24560

RNF24523

RNF24511  
RNF24512  
RNF24513

RNF24516  
RNF24515  
RNF24552

RNF24525 - Med. Angular Float  
Semi-Massive Pyrite & Silica  
918 ppb Au  
8 ppm Ag  
650 ppm As

RNF24525-27

RNF24529-31

RNF24528

Long Lake

011060M

RNF24530 - Large Angular Float  
Bands of Semi-Massive & Diss. Sulphide  
0.882% Zn  
0.58% Pb  
46.8 ppm Ag

RNF24532

RNF24532 - Small Float  
10-15 % Diss Sulphide  
0.795% Zn  
0.215% Pb

RNF24534  
RNF24533

RNF24561

RNF24535  
RNF24562

RNF24537

RNF24536

RNF24563

RNF24538

RNF24540

RNF24539

Victoria Lake

2 Kilometers

**Rub**  
**Victor**  
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Figure  
S

**Zinc (p**

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- ★ 1
- ★ 2
- ★

UTM Zone 21U  
Scale 1:15  
NTS 12A

480000 481000 482000 483000 484000 485000